



## Technical Data Sheet

# DOWSIL™ 1-6184 Water Repellent

Low-VOC, multifunctional, self-crosslinking, water-soluble siloxane

### Features & Benefits

- Approved to German WTA 4/4/04-D guidelines for damp-proof course (DPC)
- Water dilutable
- Self-crosslinking after application
- Chemically bonds to the substrate
- Principal application as DPC; solutions are easily injected into masonry
- Secondary application for façade protection
- Forms true solutions in water for maximum penetration depth
- Performs at low active levels
- Diluted solutions stable up to one year

### Composition

- Water-soluble siloxane

### Applications

- Principal application as a pressure injected damp-proof course (DPC) material to impart a water barrier layer to masonry when formulated with water
- Secondary application as a penetrating water repellent for the surface treatment of absorbent materials such as brick and tile; also suitable for aged masonry

### Typical Properties

Specification Writers: These values are not intended for use in preparing specifications.

Test <sup>1</sup>	Property	Unit	Result
CTM 0176	Appearance		Clear to amber liquid
	Actives	%	98
CTM 0001A	Specific Gravity	g/cm <sup>3</sup>	1.048
CTM 0004	Viscosity at 25°C (77°F)	cSt	15
CTM 0090A	Flash Point,		
	at 100% 1-6184 Water Repellent	°C (°F)	27 (81)
	at 15% 1-6184 Water Repellent Solution		63 (145)
	at 2.5% 1-6184 Water Repellent Solution		82 (180)
CTM 090A	USA Volatile Organic Content (VOC), Maximum	g/L	370

1. CTM: Corporate Test Method, copies of CTM's are available on request.

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## Description

DOWSIL™ 1-6184 Water Repellent is supplied at 98% siloxane content, and is typically diluted in water to concentrations between 7.5 to 15.0% siloxane for damp-proof injected applications, and 7.0 to 10.0% siloxane for surface treatments. DOWSIL 1-6184 Water Repellent will cure to form a water-insoluble, water-repellent treatment within 24 hours of application, although maximum water beading performance can take up to 3 days to fully develop.

## How To Use

DOWSIL 1-6184 Water Repellent can be formulated with water to a weight ratio from 1:5.6 (DOWSIL 1-6184 Water Repellent: water) to 1:12.5, depending on the application and performance requirements for the final product.

When formulating with demineralized water, the formulated product is stable up to one year. Dilution with tap water, particularly if it has a high dissolved mineral salt content, will considerably reduce the stability of the solution.

At concentrations greater than 20% by weight in water (ratio of 1:4), the product will rapidly form a gel. When diluting, always add the DOWSIL 1-6184 Water Repellent to the water with continuous stirring. *Never add water to DOWSIL 1-6184 Water Repellent as this may result in high localized concentration of the product leading to excessive heat generation in the solution.*

### Damp-Proof Applications

For use as a pressure injected damp-proof application, a ratio of between 1:5.6 to 1:17.5 (DOWSIL 1-6184 Water Repellent: water) by weight is suggested. The rate of injection of a solution of DOWSIL 1-6184 Water Repellent has been shown to be the same as water. See Table 1.

**Table 1: Injection Rates for Severn Valley Red Bricks at 50 psi**

	Water	5.4% Solution of DOWSIL 1-6184 Water Repellent
Initial Weight, Grams	2184 ± 19	2179 ± 23
Weight Increase At 10 Minutes, Grams	266 ± 21	256 ± 23
Additional Weight Increase At 15 Minutes, Grams	Fully Saturated At 10 Minutes	Fully Saturated At 10 Minutes
% Weight Increase	12.2 ± 1.0	11.7 ± 1.0

### Application Method

Inject the formulated product using a proprietary recirculating pump with the appropriate number of injection nozzles to generate a constant injection pressure within the drilled holes. Continue injection into the wall until a continuous band of solution-saturated wall is obvious. See Table 2 for performance data.

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**Table 2: Water Uptake Through Bricks**

Pillar Test<sup>1</sup> – Capillary rise of water through treated brick; water absorption shown as % weight increase.

Brick Treatment	% Weight Increase			
	0 Month	1 Month	2 Months	3 Months
Control – Untreated	0	15.9	4.2	7.9
5.4% Solution DOWSIL 1-6184 Water Repellent	0	0	0	0

1. Pillar test: Separately treated and untreated blocks submerged to a depth of 5 mm in water. Place a gauze and untreated blocks on top of all and measure weight increase of top blocks.

### Facade Treatment Solutions

For use in a facade treatment, a formulation ratio of 1:9 to 1:12.5 (DOWSIL 1-6184 Water Repellent: water) is suggested.

### Surface Application

The formulated product should be applied to the substrate until it is fully saturated using brush, roller, or flood coating. Coverage rates will depend on the absorption characteristics of the substrate but will typically be in the range of 2 to 6 m<sup>2</sup>/L; trials will determine the precise level. If two applications of formulated product are required to fully saturate the substrate, the second application must be carried out immediately after the first before it has cured. See Table 3 for performance data.

Surfaces should be free of surface dirt, dust, oils, and other contaminants prior to application. The substrate should be dry to the touch.

As with most repellents, plants or shrubs should be protected from exposure to the treatment. Windows and any other material that should not be treated must be protected, or cleaning with solvents maybe necessary to remove the treatment. If applied by spray, control overspray to prevent contamination of nearby substrates and areas.

To ensure compatibility, desired water repellency and any possible color change a test application is recommended on each substrate to be treated.

**Table 3: Surface Application – 7% Solution of DOWSIL 1-6184 Water Repellent**

	% Reduction in Water Absorption
Brick 1 <sup>1</sup>	95
Brick 2 <sup>1</sup>	92
Aged Mortar	96

1. Bricks types 1 and 2 have different porosity.

Solution	Dilution
7%	1:12.5
7.5%	1:12.3
10%	1:9
15%	1:5.6

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## Handling Precautions

Wear eye protection. In case of contact with skin and eyes, flush immediately with water, and obtain medical attention if in contact with eyes. Vapor may irritate; ensure adequate ventilation.

As supplied, the material is considered flammable. When diluted in water to 15% solution, the solution has a flash point of approximately 63°C (145°F), and at 2.5%, a flash point of approximately 82°C (180°F).

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE SAFETY DATA SHEET IS AVAILABLE ON THE DOW WEBSITE AT [WWW.CONSUMER.DOW.COM](http://WWW.CONSUMER.DOW.COM), OR FROM YOUR DOW SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DOW CUSTOMER SERVICE.

## Usable Life And Storage

This product reacts with atmospheric humidity releasing methanol on cure. Prolonged contact with air should be avoided as well as contact with small amounts of water.

When stored between 5 and 38°C (41 and 101°F) in the original unopened containers, this product has a usable life of 12 months from the date of manufacture.

## Packaging Information

DOWSIL 1-6184 Water Repellent is supplied in 18.2 and 199.8 kg (40 and 440 lb) containers.

## Limitations

Solutions of DOWSIL 1-6184 Water Repellent are not recommended for the treatment of fresh concrete, other highly alkaline surfaces, or most natural stone.

Do not use on structures under constant hydrostatic pressure. Do not apply when the ambient temperature is at or below 5°C (41°F), or when the substrate is frozen.

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

## Health And Environmental Information

To support customers in their product safety needs, Dow has an extensive Product Stewardship organization and a team of product safety and regulatory compliance specialists available in each area.

For further information, please see our website, [www.consumer.dow.com](http://www.consumer.dow.com) or consult your local Dow representative.

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